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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,109

03/13/2006

Nobuo Kimura

20241/0203479-US0

2398

7278

7590

10/05/2009

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EXAMINER

FLETCHER III, WILLIAM P

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

10/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,109	Applicant(s) KIMURA ET AL.	
	Examiner William P. Fletcher III	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 12, 19, 22-29, 35-37, 41, 42, 44, 49, 55, 57 and 67 is/are pending in the application.
- 4a) Of the above claim(s) 22-24, 35-37, 41, 42, 44, 49 and 63-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 12, 19, 25-29, 55 and 57-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 29, 2009, has been entered.

Response to Amendment

2. Claims 1-4, 12, 19, 22-29, 35-37, 41, 42, 44, 49, 55, and 57-67, remain pending.

Election/Restrictions

3. Claims 22-24, 35-37, 41, 42, 44, 49, and 63-67, remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention/species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on December 19, 2007.

Claim Rejections - 35 USC § 102

Claim Rejections - 35 USC § 103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 2, 12, 19, 25-29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 2001/0019773 A1.

A. Claims 1 and 12

i. This reference teaches a process for the formation of an organic film on a substrate comprising bringing the substrate into contact with a solution [0010, for example]. The solution includes a metal (Si) based water-repellent (surfactant) having a hydrolysable group [0025-0036], an inorganic/organic acid catalyst [0028, 0032]. The water content is disclosed as less than 4000 ppm [0041].

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ii. The organic film is not expressly taught as a “thin film” but, since Applicant does not expressly define the term “thin film” and this reference anticipates Applicant’s claimed deposition compounds and process steps, resulting in a film having a surface roughness on the order of nanometers [0182], it is the Examiner’s position that the film deposited may be considered a “thin film,” within the context of the invention. In the alternative, it is the Examiner’s position that the thickness of the film is a result-effective variable: the film must be thick enough to achieve the desired coverage and exhibit the desired water repellency, but not so thick as to be unduly wasteful of materials or, as in the case of a glass substrate, to adversely affect the transparency of the substrate. As such, it would have been obvious to one skilled in the art to optimize the thickness of the film by routine experimentation, absent evidence of unexpected results demonstrating the criticality of the thickness of the film.

B. Claim 2

i. The ratios in this claim may be translated into 0.1%-100%, of which the ratio of 1:1 wt.-% taught in [0029] is inclusive.

C. Claim 19

i. This reference teaches the following compounds that meet the limitations of this claim:

[0026] As the water-repellent main material, fluoroalkylalkoxysilane-system compounds or fluoroalkylhalidesilane-system compounds are usable, which are, for example, $\text{CF}_3\text{CH}_2\text{CH}_2\text{Si}(\text{OR})_3$, $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{Si}(\text{OR})_3$, $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{SiR}(\text{OR})_2$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{Si}(\text{OR})_3$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{SiR}(\text{OR})_2$, $\text{CF}_3\text{CH}_2\text{CH}_2\text{SiCl}_3$, $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{SiCl}_3$, $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{SiRCl}_2$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{SiCl}_3$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{SiRCl}_2$, $\text{CF}_3(\text{CF}_2)_6\text{CH}_2\text{CH}_2\text{Si}(\text{OR})_3$, $\text{CF}_3(\text{CF}_2)_6\text{CH}_2\text{CH}_2\text{RSi}(\text{OR})_2$, $\text{CF}_3(\text{CF}_2)_9\text{CH}_2\text{CH}_2\text{SiCl}_3$ and $\text{CF}_3(\text{CF}_2)_9\text{CH}_2\text{CH}_2\text{RSiCl}_2$. It is to be noted that "R" represents CH_3 , C_2H_5 or C_3H_7 .

D. Claims 25 and 26

- i. This reference teaches between 15% and 75% RH [0045].

E. Claim 27

- i. This reference teaches hydrocarbon-based solvents [0027].

F. Claims 28 and 29

- i. While this reference does not expressly state that the films are crystalline or monomolecular, it is the Examiner's position that this is a physical property of the deposited film. Since this reference anticipates Applicant's claimed deposition compounds and process steps, it is the Examiner's position that the film deposited may be considered as possessing these properties within the context of the invention.

8. Claims 3, 4, 55, and 57-62 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 2001/0019773 A1.

A. Claims 3, 4, and 55

- i. As noted above, this reference teaches that the water content is less than 4000 ppm [0041].

ii. While this reference does not specify whether the contacting step is repeated, it is well known to repeat application of a coating material in order to build up a film of a desired thickness.

iii. Further, it would have been obvious to contact two or more substrates with the same solution in order to improve the efficiency of the process by processing multiple substrates in the same bath.

B. Claim 57

i. This reference teaches the following compounds that meet the limitations of this claim:

[0026] As the water-repellent main material, fluoroalkylalkoxysilane-system compounds or fluoroalkylhalidesilane-system compounds are usable, which are, for example, $\text{CF}_3\text{CH}_2\text{CH}_2\text{Si}(\text{OR})_3$, $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{Si}(\text{OR})_3$, $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{SiR}(\text{OR})_2$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{Si}(\text{OR})_3$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{SiR}(\text{OR})_2$, $\text{CF}_3\text{CH}_2\text{CH}_2\text{SiCl}_3$, $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{SiCl}_3$, $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{SiRCl}_2$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{SiCl}_3$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{SiRCl}_2$, $\text{CF}_3(\text{CF}_2)_6\text{CH}_2\text{CH}_2\text{Si}(\text{OR})_3$, $\text{CF}_3(\text{CF}_2)_6\text{CH}_2\text{CH}_2\text{RSi}(\text{OR})_2$, $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{SiCl}_3$ and $\text{CF}_3(\text{CF}_2)_6\text{CH}_2\text{CH}_2\text{RSiCl}_2$. It is to be noted that "R" represents CH_3 , C_2H_5 or C_3H_7 .

C. Claims 58 and 59

i. This reference teaches between 15% and 75% RH [0045].

D. Claim 60

i. This reference teaches hydrocarbon-based solvents [0027].

E. Claims 61 and 62

i. While this reference does not expressly state that the films are crystalline or monomolecular, it is the Examiner's position that this is a

physical property of the deposited film. Since this reference anticipates Applicant's claimed deposition compounds and process steps, it is the Examiner's position that the film deposited may be considered as possessing these properties within the context of the invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Sunday, 5:00 AM - 12:00 PM and Monday through Friday, 5:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/William Phillip Fletcher III/
Primary Examiner, Art Unit 1792

September 30, 2009